

REMARKS

In an official office action mailed on May 7, 2003, claims 1-14 continue to be rejected by the Examiner under 35 U.S.C. 103 (a) as being unpatentable over U.S. Patent No. 5,905,271 to Wynn (“Wynn”). Applicants respectfully traverse this rejection. Applicants have amended claims 1-7 and 11-12 herewith to more clearly define the invention and distinguish it over the prior art. Applicants respectfully submit that the currently amended claim 1 from which claims 2-14 depend are not obvious by the disclosure provided in Wynn (or previously cited Dätwyler). Support for the amendment to claim 1 is found generally throughout the specification and in particular on page 6 lines 4-11. Nothing in the prior art discloses or suggests a “non-adjustable stepped element” in a flow cell such as Applicants particularly disclose and claim in the amended claims.

As previously pointed out, and effectively acknowledged by the Examiner, Wynn discloses a flow cell having an adjustable stepped window that is accommodated within the flow cell in which the optical pathlength through the product stream can be precisely adjusted by movement of either stepped element. After adjustment of either stepped element the adjustable stepped element is locked into place by use of a set screw. In contrast, Applicants disclose and claim a non-adjustable stepped element having a stem length that is selected to increase or decrease the fixed, non-adjustable fluidic measurement pathlength. The stepped element of the instant claimed invention is fixed and is “non-adjustable” and provides for a “fixed, non-adjustable fluidic pathlength”.

It is clear from the Wynn disclosure that the stepped element or window itself is adjustable. Specifically, Wynn discloses windows that are moved back and forth in order to finely adjust the optical path between windows. This adjustment to the stepped element is emphasized within Wynn as follows:

“Rotation of the adjuster bodies provides a vernier adjustment which permits the spacing between the windows, and hence the length of the optical path between the windows, to be set with a high degree of precision.” (Column 3 lines 6-9, emphasis added).

Contrary to Wynn, in Applicants' claimed invention the element holder of the flow cell is configured so that "pressure exerted against said substantially planar sealing surface of said non-adjustable stepped element and said substantially planar sealing surface of said cell body cause said non-adjustable stepped element to be fixed and reliably sealed within said cell body". The measurement pathlength can only be changed by selecting or changing the stepped element to one with an increased or decreased stem length of the non-adjustable stepped element and not by movement or adjustment of the stepped element.

Applicants' claimed invention is specifically configured to avoid problems with adjustable flow cells, such as disclosed in Wynn. As Applicants have noted within the specification, a non-adjustable stepped element avoids the potential for contamination from unswept volumes due to adjustable sealing mechanisms. While this unswept volume problem may not be a major issue at high preparative flow rates, it becomes increasingly problematic at flow rates that are typical of analytical work. Another deficiency of adjustable flow cells, such as Wynn, is that they are generally more difficult to rebuild and maintain than Applicants' non-adjustable cells. Applicants' claimed invention that has a non-adjustable and fixed stepped element allows changing the fluidic pathlength by changing stepped elements, but prevents unswept volumes and contamination that can occur in a flow cell having an adjustment mechanism such as disclosed in Wynn.

It is respectfully submitted that Wynn does not suggest or teach a flow cell having "a non-adjustable stepped element having a stem and a base, said stem having an end surface protruding into said fluidic channel creating a fixed, non-adjustable fluidic measurement pathlength and said base having a substantially planar sealing surface, a length of said stem being selected to increase or decrease said fixed, non-adjustable fluidic measurement pathlength". By the amendments herein, the Applicants respectfully submit that the rejections of record have been overcome.

II. Claims 1-14 and 22 rejected under 35 USC 103(a).

The Examiner further rejected claims 1-14 and 22 under 35 USC 103(a) as being unpatentable over Datwyler et al. U.S. Patent No. 5,003,174 (Datwyler) in view of Wynn and Goldsmith U.S. Patent No. 4,580,901 (Goldsmith).

Applicants respectfully submit that the apparatus of currently amended claim 1 and the method of creating an accurate fixed measurement pathlength as claimed in currently amended claim 22 is neither taught or suggested by Wynn, Dätwyler or Goldsmith either alone or in combination. Both Wynn and Dätwyler, because of their adjustable design are required to disadvantageously use o-rings for sealing. Neither Wynn nor Dätwyler, because of their adjustable element design, disclose or suggest a “substantially planar” sealing surface. Further, neither Wynn nor Dätwyler because of their adjustable element design, disclose or suggest a “non-adjustable stepped element” such as Applicants particularly disclose and claim.

The Examiner states that it is also more generally known in the art that sealing gaskets can be used against planar surfaces to seal windows in fluid-containing sample cells as shown in Goldsmith. While Goldsmith shows gaskets sealing a window, it neither suggests nor discloses an apparatus having stepped element having a substantially planar surface for sealing. Goldsmith, like Wynn and Datwyler does not disclose or suggest a non-adjustable stepped element. Further, the window of Goldsmith can not be used to adjust the pathlength of a flow cell. Applicants' method of changing pathlength is by the selection of a stem length of a non-adjustable stepped element having a substantially planar sealing surface and an element holder having a substantially planar sealing surface “whereupon pressure exerted against said substantially planar sealing surface of said non-adjustable stepped element and said substantially planar sealing surface of said cell body cause said non-adjustable stepped element to be fixed and reliably sealed within said cell body with said stem protruding into said fluidic channel creating said fixed non-adjustable fluidic measurement pathlength.” The prior art does not disclose or suggest, what the Applicants claim with particularity.

The Examiner further states that those in the art would have found it obvious at the time of the invention was made to use a “substantially planar” sealing surface in the place of the conical sealing surface of Dätwyler because it is, and would have been recognized as being, the function of sealing, and not the exact shape of the sealing surface, which is of importance in such situations...” However, Dätwyler specifically teaches away from the “substantially planar” surface of the instant claim invention as follows:

“According to a preferred embodiment of the invention, the widening portions are conical in shape so that the annular spaces accommodating the O-

rings exhibit a triangular cross-section. One thereby obtains wedge-shaped clearances into which the O-rings are urged by the fluid pressure, which provides a particularly favorable sealing effect." (Dätwyler column 3 lines 56-62 emphasis added).

Since neither configuration nor the method within Applicants claimed invention is found anywhere within the art, it is fair to assume that in creating his obviousness rejection that the Examiner gleaned knowledge from the Applicants disclosure contrary to the holding of *In re McLaughlin*. Applicant respectfully requests that the rejected claims be reconsidered in light of well-established legal principles, which provide,

"That one skilled in the art is not synonymous with obviousness.... That one can reconstruct and/or explain the theoretical mechanism of an invention by means of logic and sound scientific reasoning does not afford the basis for an obviousness conclusion unless that logic and reasoning also supplies sufficient impetus to have led one of ordinary skill in the art to combine the teachings of the reference to make the claimed invention" Ex parte Levengood, 28 USPQ 2d 1300 (Bd. Pat. App. & Inter. 1993).

The particular combination of the cited references, which the Examiner makes in an attempt to arrive at the Applicant's invention, is neither taught nor suggested by either reference. The references, alone or in combination, because of the differences in the features of each as discuss above, do not provide "sufficient impetus" to support the combination that the Examiner makes to effect the obviousness rejection. In any event, the combination does not arrive at Applicant's invention. Applicants' claimed invention is patentably distinct from that of Wynn, Dätwyler and Goldsmith and Applicants respectfully request the withdrawal of this rejection.

CONCLUSION

Accordingly, it is believed that in view of the above amendments and remarks, all claims are in condition for allowance, and therefore reconsideration and allowance are earnestly solicited. If the Examiner feels that a telephone conference would expedite prosecution of this case, or resolve any remaining issues, the Examiner is invited to contact the undersigned at (617) 856-8369.

Respectfully submitted,

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